8-16-2019

The Datafication of Cycling – Effects and Opportunities at the Intersection of Industry and Transport Policy

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DATAFICATION OF CYCLING
TREC FRIDAY SEMINAR

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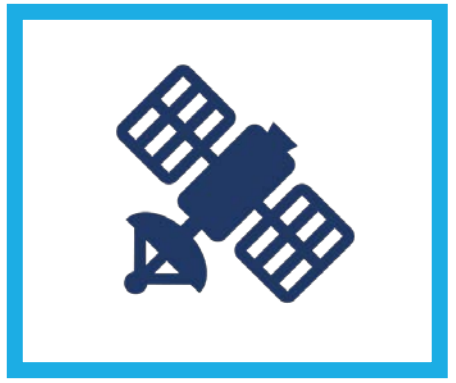


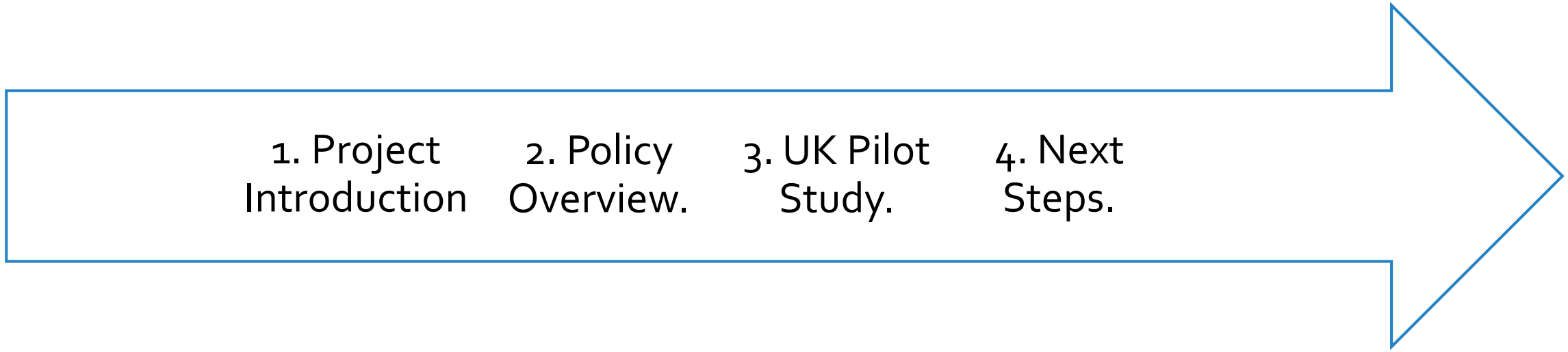
BACKGROUND

PhD candidate at the University of Brighton, UK.

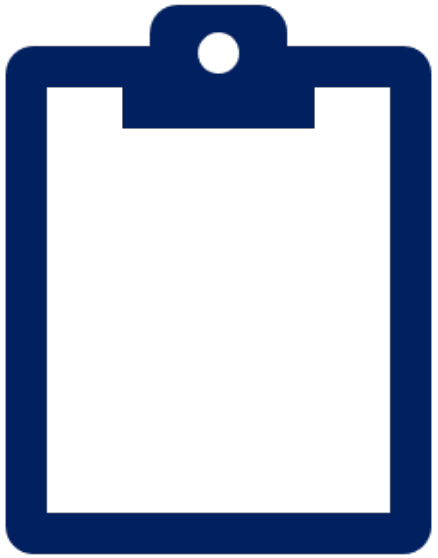
Project funded by UK's Industrial Strategy steer.

Geography and planning education.

Motivation:
www.cycleboom.org/briefing-notes



SEMINAR OVERVIEW



DATAFICATION OF CYCLING PROJECT

SECTION 1

Datafication of Cycling Project

Datafication definition:

The ‘datafication’ of societies refers to the role of communication technology companies and the collection of user data for understanding aspects of social behaviour (Powell, 2014).

Research Origin

"It was very haphazard, two-hour counts done once a year."

"Volunteers, sitting on the street corner because they wanted better bike facilities. Pathetic, really."

Quoted in Walker (2017)

Research Aim

The aim of this research is to articulate how the datafication of cycling is influencing the promotion of cycling transportation planning at a local and regional level, across national contexts.

Starting Question

Are public-private partnerships and the sharing of cycling app data contributing to increased cycling provision and infrastructure?

If so, who benefits?

Big Data Solution?

"Big Data holds the promise to illuminate social processes that were previously under sampled or poorly understood. For those involved in city planning, service provision and business intelligence, it still remains central to innovation and research."

Romanillos and others (2016)

Transport Reviews

ISSN: 0144-1647 (Print) 1464-5327 (Online) Journal homepage: https://www.tandfonline.com/loi/ttrv20

Big Data and Cycling

Gustavo Romanillos, Martin Zaltz Austwick, Dick Ettema & Joost De Kruijf

To cite this article: Gustavo Romanillos, Martin Zaltz Austwick, Dick Ettema & Joost De Kruijf (2016) Big Data and Cycling, Transport Reviews, 36:1, 114-133, DOI: 10.1080/01441647.2015.1084067

To link to this article: https://doi.org/10.1080/01441647.2015.1084067

Published online: 29 Sep 2015.

Big Data & Cycling – Research Focus

- Focus on big GPS data from ‘big app’ companies.
- Data shared in an aggregate form.
- Representativeness unknown.

Age	Male	Female		
< 25	3044	596	Cyclists	57538
25 - 34	8806	1649	Trips	1162523
35 - 44	11589	1764	Average Distance (metres)	27254.555986311100
45 - 54	10956	1564	Median Distance (metres)	16909
55 - 64	3334	430	Average time (seconds)	5488.179841726656 3383
65 – 74	643	49	Median time (seconds)	3301
75 - 84	55	0	Average Uploads	340.1898
85 – 94	8	0	Commute Counts	687397
>95	14	4		
Age Unknown	8792	1699		
Total	47241	7755	Gender Unknown 2542	Total 57538

Manchester demographic data 01/01/2017 – 31/12/17 (Data licenced by Strava, 2019)

POLICY CONTEXT

SECTION 2


LOCAL TRANSPORT
DATA DISCOVERY
Department
for Transport
northhighland.
WORLDWIDE CONSULTING

Local Transport Data Discovery Foreword

Data is a critical resource for enabling more efficient and effective public services. Opening up data and removing barriers to effective data use across the public and private sector needs to be a priority as we look to evolve and improve England's transport services.

Quoted in North Highland (2018: 4)

Cycle and pedestrian data

There is, currently, a lack of consistent and reliable pedestrian and cycling data across local authorities, with data often being collected on an ad hoc basis. Whilst developers and shopping centres often undertake pedestrian surveys, this is not shared widely with local authorities and many rely on census data to understand citizens' modes and frequency of travel.

Benefits

- Open data can help join up the first and last mile travel needs of citizens, encouraging alternative sustainable transport modes.
- Ease of access to sustainable cycle and pedestrian transport information, such as routes and travel time, for example, will nudge individual behaviour towards healthy habits.
- Better visibility of multimodal transport trends can help to support air quality programmes and policies.

Challenges

- Automatic Traffic Count sensors are not always able to distinguish between cyclists and motorcyclists.
- Manual cycle and pedestrian counts are expensive and only provide a limited snapshot of the landscape.
- A lack of data prevents a comprehensive understanding of transport usage, inhibiting assessment of multimodal travel and the measurement of the return on investment (ROI) on projects.

UK Government Industrial Strategy

Future of mobility

PILOT STUDY

PART 3

Barriers to investing in cycling: Stakeholder views from England Aldred, Watson, Lovelace, and Woodcock (2019)

	Number of respondents	Percent (of 355)
Transport officer	146	41%
Consultant	80	23%
Other	60	17%
Academic	52	15%
Advocate	41	12%
Business stakeholder	22	6%
Politician	4	1%

Online survey respondents (sample of 1733 – a response rate of 24%), Aldred and others (2019: 151)

Barriers to investing in cycling: Stakeholder views from England, Aldred and others (2019)

Barrier	Number of examples given
Political	86 examples given of political opposition
Resources	100 examples of insufficient funding or finance
Institutional	Organisational structure or culture: 48 examples
	Tools, appraisal and modelling processes: 42
	Lack of technical expertise within organisations: 63
Wider stakeholder attitudes	Business opposition: 33 examples
	Media opposition: 33
	Public opposition: 72

Qualitative survey results, Aldred and others (2019: 152)

Wave 1: UK Pilot Study
In-depth interviews with Experts

- Voice of transportation professionals largely absent from UK literature on fitness app data use / potential in transportation planning.

- 5 semi-structured interviews, purposive sampling.

- UK participants from Brighton, London, Nottingham, Powys.

Data Veracity Challenged

Fitness app data described as Strava described as ‘appealing’ due to data volume.

Membership of fitness app users acknowledged as skewed toward leisure cyclists.

Data Literacy and Skills

Senior Transportation Planners critical of the data science skills in transportation industry and lack of 'softer skills'.

Critiques of transportation professional bodies such as Transport Planning (TPP) and the Royal Town Planning Institute (RTPI).

Privacy, Procurement, & Data Sharing

Concerns raised regarding data sharing with private companies.

Data sharing a significant restriction on local authorities, heightened since the EU Directive on General Data Protection Regulation.

Confluences

- Policy unsupportive of private app data sharing.
- Legal concerns constraining potential for partnerships, especially in smaller authorities.
- Awareness of fitness app membership, concerns over data literacy and data interpretation.

NEXT STEPS

PART 4

CALL FOR U.S. PARTICIPANTS

U.S. active travel experts, get in touch:

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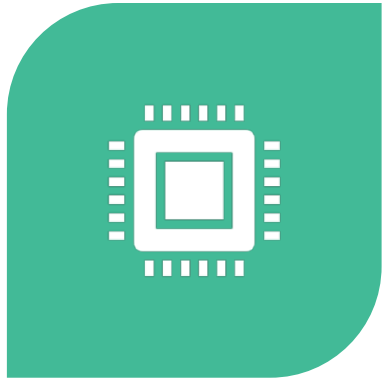
ACKNOWLEDGEMENTS

TRANSPORTATION RESEARCH & EDUCATION CENTER, PSU.

SOUTH COAST DOCTORAL TRAINING PARTNERSHIP.



CENTRE FOR DIGITAL MEDIA CULTURES, UNIVERSITY OF BRIGHTON.

THANKS FOR LISTENING.

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